SEQUENCE LISTING

<110> Fernandez-Salas, Ester
Garay, Patton
Aoki, Kei Roger

<120> Botulinum Toxin Screening Assays

<130> 17596 (BOT)

<150> US 60/547,591
<151> 2004-02-24

<160> 32

<170> FastSEQ for Windows Version 4.0

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<211> 2427
<212> DNA
<213> Homo sapiens

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<210> 2
<211> 808
<212> PRT
<213> Homo sapiens

<400> 2

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Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
        35                  40                  45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
    50                  55                  60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65                  70                  75                  80
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
                85                  90                  95
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
            100                 105                 110
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
        115                 120                 125
Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
    130                 135                 140
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145                 150                 155                 160
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
                165                 170                 175
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
            180                 185                 190
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
        195                 200                 205
Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
    210                 215                 220
Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr
225                 230                 235                 240
Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln
                245                 250                 255
Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
            260                 265                 270
Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
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Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
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Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp
305                 310                 315                 320
Val Arg Leu Arg Leu Ala Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr
                325                 330                 335
Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp
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Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala
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Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly
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Phe Phe Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu
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Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile
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Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile
                485                 490                 495
Asp Lys Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu
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Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met
        515                 520                 525
Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu
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Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala
545                 550                 555                 560
Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly
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Leu Asp Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr
            580                 585                 590
Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu
        595                 600                 605
Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn
    610                 615                 620
Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu
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Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly
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Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val
            660                 665                 670
Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
        675                 680                 685
Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu
    690                 695                 700
Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn
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Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala
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Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg
            740                 745                 750
Val Leu Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro
        755                 760                 765
Phe Glu Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser
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Pro Ser Ser Gly Gly Ser Arg Thr
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<210> 3
<211> 2421
<212> DNA
<213> Homo sapiens

<400> 3

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gctgaggaca caggtgtgga cacaggggcc ccttactgga cacggcccga gcggatggac 480
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<210> 4
<211> 806
<212> PRT
<213> Homo sapiens

<400> 4

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Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
        35                  40                  45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
    50                  55                  60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65                  70                  75                  80
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
                85                  90                  95
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
            100                 105                 110
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
        115                 120                 125
Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
    130                 135                 140
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145                 150                 155                 160
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
                165                 170                 175
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
            180                 185                 190
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
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        195                 200                 205
Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
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Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr
225                 230                 235                 240
Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln
                245                 250                 255
Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
            260                 265                 270
Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
        275                 280                 285
Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
    290                 295                 300
Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu
305                 310                 315                 320
Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu
                325                 330                 335
Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala
            340                 345                 350
Trp Leu Val Val Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Asp Glu
        355                 360                 365
Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe
    370                 375                 380
Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser
385                 390                 395                 400
Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg
                405                 410                 415
Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser
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Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly
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Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys
    450                 455                 460
Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu
465                 470                 475                 480
Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys
                485                 490                 495
Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp
            500                 505                 510
Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met
        515                 520                 525
Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala
    530                 535                 540
Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys
545                 550                 555                 560
Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp
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Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys
            580                 585                 590
Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu
        595                 600                 605
Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu
    610                 615                 620
Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg
625                 630                 635                 640
Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu
                645                 650                 655
Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr
            660                 665                 670
His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe
        675                 680                 685
Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe
    690                 695                 700
Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr
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705 710 715 720
His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser
725 730 735
Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu
740 745 750
Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro Phe Glu
755 760 765
Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly
770 775 780
Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro Pro Ser
785 790 795 800
Ser Gly Gly Ser Arg Thr
805

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<211> 2085
<212> DNA
<213> Homo sapiens

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<210> 6
<211> 694
<212> PRT
<213> Homo sapiens

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Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
        35                  40                  45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
    50                  55                  60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65                  70                  75                  80
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
                85                  90                  95
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
            100                 105                 110
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
        115                 120                 125
Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
    130                 135                 140
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145                 150                 155                 160
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
                165                 170                 175
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
            180                 185                 190
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
        195                 200                 205
Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
    210                 215                 220
Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr
225                 230                 235                 240
Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln
                245                 250                 255
Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
            260                 265                 270
Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
        275                 280                 285
Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
    290                 295                 300
Tyr Val Thr Val Leu Lys Val Ser Leu Glu Ser Asn Ala Ser Met Ser
305                 310                 315                 320
Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly
                325                 330                 335
Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys
            340                 345                 350
Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu
        355                 360                 365
Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys
    370                 375                 380
Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp
385                 390                 395                 400
Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met
                405                 410                 415
Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala
            420                 425                 430
Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys
        435                 440                 445
Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp
    450                 455                 460
Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys
465                 470                 475                 480
Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu
                485                 490                 495
Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu
            500                 505                 510
Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg
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        515                 520                 525
Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu
    530                 535                 540
Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr
545                 550                 555                 560
His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe
                565                 570                 575
Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe
            580                 585                 590
Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr
        595                 600                 605
His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser
    610                 615                 620
Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu
625                 630                 635                 640
Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro Phe Glu
                645                 650                 655
Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly
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Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro Pro Ser
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Ser Gly Gly Ser Arg Thr
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<210> 7
<211> 2409
<212> DNA
<213> Bos taurus

<400> 7

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cccgagccca gcccgcagga gcgggccttt ggcagcgggg acaccgtgga gctgagctgc 180
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cggacgtga                                                        2409

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<211> 802
<212> PRT
<213> Bos taurus

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            20                  25                  30
Arg Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Ser Pro Gln Glu Arg
        35                  40                  45
Ala Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys Arg Leu Pro Ala
    50                  55                  60
Gly Val Pro Thr Glu Pro Thr Val Trp Val Lys Asp Gly Val Gly Leu
65                  70                  75                  80
Ala Pro Ser Asp Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val Leu
                85                  90                  95
Asn Ala Ser His Glu Asp Ala Gly Ala Tyr Ser Cys Arg Gln Arg Leu
            100                 105                 110
Ser Gln Arg Leu Leu Cys Leu Phe Ser Val Arg Val Thr Asp Ala Pro
        115                 120                 125
Ser Ser Gly Asp Asp Glu Gly Gly Asp Asp Glu Ala Glu Asp Thr Ala
    130                 135                 140
Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu
145                 150                 155                 160
Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly
                165                 170                 175
Asn Pro Thr Pro Ser Ile Thr Trp Leu Lys Asn Gly Lys Glu Phe Arg
            180                 185                 190
Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg Gln Gln Gln Trp Ser
        195                 200                 205
Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys
    210                 215                 220
Val Val Glu Asn Lys Phe Gly Arg Ile Gln Gln Thr Tyr Thr Leu Asp
225                 230                 235                 240
Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
                245                 250                 255
Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys
            260                 265                 270
Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu
        275                 280                 285
Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val
    290                 295                 300
Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu
305                 310                 315                 320
Ser Leu Arg Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu
                325                 330                 335
Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val
            340                 345                 350
Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Gly Glu Ala Gly Gly Val
        355                 360                 365
Phe Ala Gly Val Leu Ser Tyr Gly Leu Gly Phe Leu Leu Phe Ile Leu
    370                 375                 380
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            420                 425                 430
Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Thr Leu Ala
        435                 440                 445
Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser
    450                 455                 460
Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly
465                 470                 475                 480
Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Ala Ala
                485                 490                 495
Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp
            500                 505                 510
Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile
        515                 520                 525
Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly
    530                 535                 540
Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg
545                 550                 555                 560
Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Thr Asp Tyr Ser Phe Asp
                565                 570                 575
Thr Cys Arg Leu Pro Glu Glu Gln Leu Thr Phe Lys Asp Leu Val Ser
            580                 585                 590
Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys
        595                 600                 605
Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp
    610                 615                 620
Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn
625                 630                 635                 640
Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp
                645                 650                 655
Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp
            660                 665                 670
Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly
        675                 680                 685
Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys
    690                 695                 700
Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr
705                 710                 715                 720
Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg Pro Thr
                725                 730                 735
Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu Thr Val Thr Ser
            740                 745                 750
Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro
        755                 760                 765
Gly Gly Gln Asp Thr Pro Ser Ser Gly Ser Ser Gly Asp Asp Ser Val
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Phe Ala His Asp Leu Leu Pro Pro Ala Pro Ser Gly Ser Gly Gly Ser
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Arg Thr
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<211> 2409
<212> DNA
<213> Mus musculus

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gagcctcctg gtccagagca gcgagttgtg cggagagcgg cagaggttcc agggcctgaa 120
cctagccagc aggagcaggt ggccttcggc agtggggaca ccgtggagct gagctgccat 180

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<210> 10
<211> 802
<212> PRT
<213> Mus musculus

<400> 10

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        35                  40                  45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
    50                  55                  60
Ala Pro Thr Gly Pro Thr Val Trp Ala Lys Asp Gly Thr Gly Leu Val
65                  70                  75                  80
Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn
                85                  90                  95
Ala Ser His Glu Asp Ala Gly Val Tyr Ser Cys Gln His Arg Leu Thr
            100                 105                 110
Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser
        115                 120                 125
Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala
    130                 135                 140
Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val
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145                 150                 155                 160
Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro
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Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu
            180                 185                 190
His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val
        195                 200                 205
Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val
    210                 215                 220
Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu
225                 230                 235                 240
Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn
                245                 250                 255
Gln Thr Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr
            260                 265                 270
Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn
        275                 280                 285
Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys
    290                 295                 300
Ser Trp Ile Ser Glu Asn Val Glu Ala Asp Ala Arg Leu Arg Leu Ala
305                 310                 315                 320
Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr Leu Cys Arg Ala Thr Asn
                325                 330                 335
Phe Ile Gly Val Ala Glu Lys Ala Phe Trp Leu Arg Val His Gly Pro
            340                 345                 350
Gln Ala Ala Glu Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val
        355                 360                 365
Tyr Ala Gly Val Leu Ser Tyr Gly Val Val Phe Phe Leu Phe Ile Leu
    370                 375                 380
Val Val Ala Ala Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys
385                 390                 395                 400
Gly Leu Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys
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Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro
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Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala
        435                 440                 445
Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser
    450                 455                 460
Arg Thr Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly
465                 470                 475                 480
Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala
                485                 490                 495
Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp
            500                 505                 510
Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile
        515                 520                 525
Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly
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Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg
545                 550                 555                 560
Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp
                565                 570                 575
Ala Cys Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser
            580                 585                 590
Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys
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Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp
    610                 615                 620
Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn
625                 630                 635                 640
Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp
                645                 650                 655
Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp
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690 695 700
Glu Gly His Arg Met Asp Lys Pro Ala Ser Cys Thr His Asp Leu Tyr
705 710 715 720
Met Ile Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr
725 730 735
Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser
740 745 750
Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro
755 760 765
Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly Asp Asp Ser Val
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Arg Thr

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<211> 2403
<212> DNA
<213> Mus musculus

<400> 11
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gatttagacc gcatcctcac tgtgacatca accgacgagt acttggacct ctccgtgccg 2280
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tga 2403

<210> 12
<211> 800
<212> PRT
<213> Mus musculus

<400> 12

Met	Val	Val	Pro	Ala	Cys	Val	Leu	Val	Phe	Cys	Val	Ala	Val	Val	Ala
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			20					25					30		
Ala	Ala	Glu	Val	Pro	Gly	Pro	Glu	Pro	Ser	Gln	Gln	Glu	Gln	Val	Ala
		35					40					45			
Phe	Gly	Ser	Gly	Asp	Thr	Val	Glu	Leu	Ser	Cys	His	Pro	Pro	Gly	Gly
	50					55					60				
Ala	Pro	Thr	Gly	Pro	Thr	Val	Trp	Ala	Lys	Asp	Gly	Thr	Gly	Leu	Val
65					70					75					80
Ala	Ser	His	Arg	Ile	Leu	Val	Gly	Pro	Gln	Arg	Leu	Gln	Val	Leu	Asn
				85					90					95	
Ala	Ser	His	Glu	Asp	Ala	Gly	Val	Tyr	Ser	Cys	Gln	His	Arg	Leu	Thr
			100					105					110		
Arg	Arg	Val	Leu	Cys	His	Phe	Ser	Val	Arg	Val	Thr	Asp	Ala	Pro	Ser
		115					120					125			
Ser	Gly	Asp	Asp	Glu	Asp	Gly	Glu	Asp	Val	Ala	Glu	Asp	Thr	Gly	Ala
	130					135					140				
Pro	Tyr	Trp	Thr	Arg	Pro	Glu	Arg	Met	Asp	Lys	Lys	Leu	Leu	Ala	Val
145					150					155					160
Pro	Ala	Ala	Asn	Thr	Val	Arg	Phe	Arg	Cys	Pro	Ala	Ala	Gly	Asn	Pro
				165					170					175	
Thr	Pro	Ser	Ile	Ser	Trp	Leu	Lys	Asn	Gly	Lys	Glu	Phe	Arg	Gly	Glu
			180					185					190		
His	Arg	Ile	Gly	Gly	Ile	Lys	Leu	Arg	His	Gln	Gln	Trp	Ser	Leu	Val
		195					200					205			
Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	Asn	Tyr	Thr	Cys	Val	Val
	210					215					220				
Glu	Asn	Lys	Phe	Gly	Ser	Ile	Arg	Gln	Thr	Tyr	Thr	Leu	Asp	Val	Leu
225					230					235					240
Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	Ala	Gly	Leu	Pro	Ala	Asn
				245					250					255	
Gln	Thr	Ala	Ile	Leu	Gly	Ser	Asp	Val	Glu	Phe	His	Cys	Lys	Val	Tyr
			260					265					270		
Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	Lys	His	Val	Glu	Val	Asn
		275					280					285			
Gly	Ser	Lys	Val	Gly	Pro	Asp	Gly	Thr	Pro	Tyr	Val	Thr	Val	Leu	Lys
	290					295					300				
Thr	Ala	Gly	Ala	Asn	Thr	Thr	Asp	Lys	Glu	Leu	Glu	Val	Leu	Ser	Leu
305					310					315					320
His	Asn	Val	Thr	Phe	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	Cys	Leu	Ala	Gly
				325					330					335	
Asn	Ser	Ile	Gly	Phe	Ser	His	His	Ser	Ala	Trp	Leu	Val	Val	Leu	Pro
			340					345					350		
Ala	Glu	Glu	Glu	Leu	Met	Glu	Thr	Asp	Glu	Ala	Gly	Ser	Val	Tyr	Ala
		355					360					365			
Gly	Val	Leu	Ser	Tyr	Gly	Val	Val	Phe	Phe	Leu	Phe	Ile	Leu	Val	Val
	370					375					380				
Ala	Ala	Val	Ile	Leu	Cys	Arg	Leu	Arg	Ser	Pro	Pro	Lys	Lys	Gly	Leu
385					390					395					400
Gly	Ser	Pro	Thr	Val	His	Lys	Val	Ser	Arg	Phe	Pro	Leu	Lys	Arg	Gln
				405					410					415	
Val	Ser	Leu	Glu	Ser	Asn	Ser	Ser	Met	Asn	Ser	Asn	Thr	Pro	Leu	Val

```
            420                 425                 430
Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val
        435                 440                 445
Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr
    450                 455                 460
Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
465                 470                 475                 480
Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro
                485                 490                 495
Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp
            500                 505                 510
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
        515                 520                 525
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly Gly Pro
    530                 535                 540
Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg Glu Phe
545                 550                 555                 560
Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys
                565                 570                 575
Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser Cys Ala
            580                 585                 590
Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
        595                 600                 605
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val
    610                 615                 620
Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Leu Asp
625                 630                 635                 640
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
                645                 650                 655
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
            660                 665                 670
Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
        675                 680                 685
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
    690                 695                 700
His Arg Met Asp Lys Pro Ala Ser Cys Thr His Asp Leu Tyr Met Ile
705                 710                 715                 720
Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
                725                 730                 735
Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser Thr Asp
            740                 745                 750
Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Gly Gly
        755                 760                 765
Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly Asp Asp Ser Val Phe Thr
    770                 775                 780
His Asp Leu Leu Pro Pro Gly Pro Pro Ser Asn Gly Gly Pro Arg Thr
785                 790                 795                 800
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<210> 13
<211> 2349
<212> DNA
<213> Mus musculus

<400> 13

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cctagccagc aggagcaggt ggccttcggc agtggggaca ccgtggagct gagctgccat 180
cctcctggag gtgcccccac agggcccacg gtctgggcta aggatggtac aggtctggtg 240
gcctcccacc gcatcctggt ggggcctcag aggctgcaag tgctaaatgc ctcccacgaa 300
gatgcagggg tctacagctg ccagcaccgg ctcactcggc gtgtgctgtg ccacttcagt 360
gtgcgtgtaa caggggctcc ttattggact cgcccggagc gaatggataa gaaactgctg 420
gctgtgccag ccgcaaacac tgtccgcttc cgctgcccag ctgctggcaa ccctaccccc 480
tccatctcct ggctgaagaa tggcaaagaa ttccgagggg agcatcgcat tgggggcatc 540
```

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aagctccggc accagcagtg gagcttggtc atggaaagtg tggtaccctc cgatcgtggc 600
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gtgctggagc gctccccaca ccggcccatc ctgcaggctg ggctgccggc caaccagaca 720
gccattctag gcagtgacgt ggagttccac tgcaaggtgt acagcgatgc acagccacac 780
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tacgtcactg tactcaagac tgcaggcgct aacaccaccg acaaggagct agaggttctg 900
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aagctgttga aagagggcca ccgcatggac aagccagcca gctgcacaca tgacctgtac 2100
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gtagaggatt tagaccgcat cctcactgtg acatcaaccg acgagtactt ggacctctcc 2220
gtgccgtttg agcagtactc gccaggtggc caggacacgc ctagctccag ctcgtccgga 2280
gatgactcgg tgttcaccca tgacctgcta cccccaggtc cacccagtaa cgggggacct 2340
cggacgtga                                                        2349
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<210> 14
<211> 782
<212> PRT
<213> Mus musculus

<400> 14

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Gly Ala Thr Ser Glu Pro Pro Gly Pro Glu Gln Arg Val Val Arg Arg
            20                  25                  30
Ala Ala Glu Val Pro Gly Pro Glu Pro Ser Gln Gln Glu Gln Val Ala
        35                  40                  45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
    50                  55                  60
Ala Pro Thr Gly Pro Thr Val Trp Ala Lys Asp Gly Thr Gly Leu Val
65                  70                  75                  80
Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn
                85                  90                  95
Ala Ser His Glu Asp Ala Gly Val Tyr Ser Cys Gln His Arg Leu Thr
            100                 105                 110
Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Gly Ala Pro Tyr
        115                 120                 125
Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val Pro Ala
    130                 135                 140
Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr Pro
145                 150                 155                 160
Ser Ile Ser Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu His Arg
                165                 170                 175
Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu
            180                 185                 190
Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Glu Asn
        195                 200                 205
```

```
Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu Glu Arg
    210                 215                 220
Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Gln Thr
225                 230                 235                 240
Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp
                245                 250                 255
Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser
            260                 265                 270
Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys Thr Ala
        275                 280                 285
Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu Ser Leu His Asn
    290                 295                 300
Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser
305                 310                 315                 320
Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val Leu Pro Ala Glu
                325                 330                 335
Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val Tyr Ala Gly Val
            340                 345                 350
Leu Ser Tyr Gly Val Val Phe Phe Leu Phe Ile Leu Val Val Ala Ala
        355                 360                 365
Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser
    370                 375                 380
Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln Val Ser
385                 390                 395                 400
Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile
                405                 410                 415
Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val Ser Glu
            420                 425                 430
Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr Arg Leu
        435                 440                 445
Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met
    450                 455                 460
Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro Val Thr
465                 470                 475                 480
Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser
                485                 490                 495
Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys
            500                 505                 510
Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr
        515                 520                 525
Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg
    530                 535                 540
Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys Arg Leu
545                 550                 555                 560
Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser Cys Ala Tyr Gln
                565                 570                 575
Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile His Arg
            580                 585                 590
Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val Met Lys
        595                 600                 605
Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Leu Asp Tyr Tyr
    610                 615                 620
Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala Pro Glu
625                 630                 635                 640
Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp Ser Phe
                645                 650                 655
Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro
            660                 665                 670
Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg
        675                 680                 685
Met Asp Lys Pro Ala Ser Cys Thr His Asp Leu Tyr Met Ile Met Arg
    690                 695                 700
Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu
705                 710                 715                 720
```

```
Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser Thr Asp Glu Tyr
                725                 730                 735
Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Gly Gly Gln Asp
            740                 745                 750
Thr Pro Ser Ser Ser Ser Ser Gly Asp Asp Ser Val Phe Thr His Asp
        755                 760                 765
Leu Leu Pro Pro Gly Pro Pro Ser Asn Gly Gly Pro Arg Thr
    770                 775                 780
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<210> 15
<211> 2409
<212> DNA
<213> Rattus norvegicus

<400> 15

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gagcctcccg gtccagagca gcgagttggt cggagagcgg cagaggttcc agggcctgaa 120
cctagccagc aggagcaggt ggccttcggc agtggggaca ctgtggagct gagctgccat 180
ccgcctggag gtgcccccac aggccccact ctctgggcta aggacggtgt ggggctggtg 240
gcctcccacc gtatcctggt ggggcctcag aggcttcaag tgctaaacgc cacccatgag 300
gatgctgggg tctacagctg ccagcagcgg ctaacccggc gtgtgctgtg ccactttagt 360
gtgcgtgtaa cagatgctcc gtcctcagga gatgacgaag atggggagga cgtggctgaa 420
gacacagggg ctccttactg gactcgaccg gagcgtatgg ataagaaact gctggctgtg 480
ccagctgcaa acactgtacg cttccgctgc ccagctgctg gcaaccccac cccctccatc 540
ccctggctga agaacggcaa agaattccga ggggagcacc gcattggggg cattaagctc 600
cggcaccagc agtggagctt ggtcatggaa agtgtggtgc cctctgaccg cggcaattac 660
acctgcgtgg ttgagaacaa gtttggcagc atccggcaga cgtacaccct ggatgtgctg 720
gagcgctccc cacaccggcc catcctgcag gctgggctgc cagccaacca gacagccgtt 780
ctgggcagtg acgtggagtt ccactgcaag gtgtacagcg acgcacagcc acacatccag 840
tggctgaagc acgtggaggt gaatgggagc aaggtgggcc ctgacggcac gccctacgtc 900
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aatgtgtcgg agcgggacgg gggcgagtac ctctgtcgag ccaccaattt cataggcgtg 1020
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ggcctgggct cgcccaccgt gcacaaggtc tctcgcttcc cgcttaagcg acaggtgtcc 1260
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gagatggaga tgatgaaaat gattggcaag cacaagaaca tcattaacct gttgggggcc 1620
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cggacgtga                                                        2409
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<210> 16
<211> 802
<212> PRT
<213> Rattus norvegicus

<400> 16

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Gly Val Thr Ser Glu Pro Pro Gly Pro Glu Gln Arg Val Gly Arg Arg
            20                  25                  30
Ala Ala Glu Val Pro Gly Pro Glu Pro Ser Gln Gln Glu Gln Val Ala
        35                  40                  45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
    50                  55                  60
Ala Pro Thr Gly Pro Thr Leu Trp Ala Lys Asp Gly Val Gly Leu Val
65                  70                  75                  80
Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn
                85                  90                  95
Ala Thr His Glu Asp Ala Gly Val Tyr Ser Cys Gln Gln Arg Leu Thr
            100                 105                 110
Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser
        115                 120                 125
Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala
    130                 135                 140
Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val
145                 150                 155                 160
Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro
                165                 170                 175
Thr Pro Ser Ile Pro Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu
            180                 185                 190
His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val
        195                 200                 205
Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val
    210                 215                 220
Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu
225                 230                 235                 240
Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn
                245                 250                 255
Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr
            260                 265                 270
Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn
        275                 280                 285
Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys
    290                 295                 300
Ser Trp Ile Ser Glu Asn Val Glu Ala Asp Ala Arg Leu Arg Leu Ala
305                 310                 315                 320
Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr Leu Cys Arg Ala Thr Asn
                325                 330                 335
Phe Ile Gly Val Ala Glu Lys Ala Phe Trp Leu Arg Val His Gly Pro
            340                 345                 350
Gln Ala Ala Glu Glu Glu Leu Met Glu Val Asp Glu Ala Gly Ser Val
        355                 360                 365
Tyr Ala Gly Val Leu Ser Tyr Gly Val Gly Phe Phe Leu Phe Ile Leu
    370                 375                 380
Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys
385                 390                 395                 400
Gly Leu Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys
                405                 410                 415
Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro
            420                 425                 430
Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala
        435                 440                 445
Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser
    450                 455                 460
Arg Thr Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly
465                 470                 475                 480
Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala
                485                 490                 495
Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp
            500                 505                 510
```

```
Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile
        515                 520                 525
Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly
    530                 535                 540
Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg
545                 550                 555                 560
Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp
                565                 570                 575
Ala Cys Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser
            580                 585                 590
Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys
        595                 600                 605
Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp
    610                 615                 620
Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn
625                 630                 635                 640
Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp
                645                 650                 655
Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp
            660                 665                 670
Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly
        675                 680                 685
Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys
    690                 695                 700
Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr
705                 710                 715                 720
Met Ile Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr
                725                 730                 735
Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser
            740                 745                 750
Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro
        755                 760                 765
Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly Asp Asp Ser Val
    770                 775                 780
Phe Thr His Asp Leu Leu Pro Pro Gly Pro Pro Ser Asn Gly Gly Pro
785                 790                 795                 800
Arg Thr
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<210> 17
<211> 2403
<212> DNA
<213> Rattus norvegicus

<400> 17

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<210> 18
<211> 800
<212> PRT
<213> Rattus norvegicus

<400> 18

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Gly Val Thr Ser Glu Pro Pro Gly Pro Glu Gln Arg Val Gly Arg Arg
            20                  25                  30
Ala Ala Glu Val Pro Gly Pro Glu Pro Ser Gln Gln Glu Gln Val Ala
        35                  40                  45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
    50                  55                  60
Ala Pro Thr Gly Pro Thr Leu Trp Ala Lys Asp Gly Val Gly Leu Val
65                  70                  75                  80
Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn
                85                  90                  95
Ala Thr His Glu Asp Ala Gly Val Tyr Ser Cys Gln Gln Arg Leu Thr
            100                 105                 110
Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser
        115                 120                 125
Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala
    130                 135                 140
Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val
145                 150                 155                 160
Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro
                165                 170                 175
Thr Pro Ser Ile Pro Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu
            180                 185                 190
His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val
        195                 200                 205
Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val
    210                 215                 220
Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu
225                 230                 235                 240
Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn
                245                 250                 255
Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr
            260                 265                 270
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Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn
        275                 280                 285
Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys
    290                 295                 300
Thr Ala Gly Ala Asn Thr Thr Asp Arg Glu Leu Glu Val Leu Ser Leu
305                 310                 315                 320
His Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
                325                 330                 335
Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val Leu Pro
            340                 345                 350
Ala Glu Glu Glu Leu Met Glu Val Asp Glu Ala Gly Ser Val Tyr Ala
        355                 360                 365
Gly Val Leu Ser Tyr Gly Val Gly Phe Phe Leu Phe Ile Leu Val Val
    370                 375                 380
Ala Ala Val Thr Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu
385                 390                 395                 400
Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln
                405                 410                 415
Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val
            420                 425                 430
Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val
        435                 440                 445
Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr
    450                 455                 460
Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
465                 470                 475                 480
Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro
                485                 490                 495
Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp
            500                 505                 510
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
        515                 520                 525
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly Gly Pro
    530                 535                 540
Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg Glu Phe
545                 550                 555                 560
Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys
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Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser Cys Ala
            580                 585                 590
Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
        595                 600                 605
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val
    610                 615                 620
Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Leu Asp
625                 630                 635                 640
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
                645                 650                 655
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
            660                 665                 670
Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
        675                 680                 685
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
    690                 695                 700
His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr Met Ile
705                 710                 715                 720
Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
                725                 730                 735
Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser Thr Asp
            740                 745                 750
Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Gly Gly
        755                 760                 765
Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly Asp Asp Ser Val Phe Thr
    770                 775                 780
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785 790 795 800

<210> 19
<211> 2421
<212> DNA
<213> Gallus gallus

<400> 19
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gattcggggc tgtacagttg caagccaagg cattccaacg aggtcctggg aaactttaca 360
gtcagagtga cagattcccc ttcgtcaggt gatgatgaag atgatgacga tgagtcagag 420
gatacaggtg tccccttctg gacccggcca gataagatgg agaagaagct gctggcagtt 480
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tactggctga agaatggcaa agaattcaag ggagagcaca ggatcggggg catcaagttg 600
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aatggcgtca tccgcacgtg a 2421

<210> 20
<211> 806
<212> PRT
<213> Gallus gallus

<400> 20
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Gly Gln Ala Ala Glu Tyr Leu Arg Ser Glu Thr Ala Phe Leu Glu Glu
35 40 45

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Leu Val Phe Gly Ser Gly Asp Thr Ile Glu Leu Ser Cys Asn Thr Gln
    50                  55                  60
Ser Ser Ser Val Ser Val Phe Trp Phe Lys Asp Gly Ile Gly Ile Ala
65                  70                  75                  80
Pro Ser Asn Arg Thr His Ile Gly Gln Lys Leu Leu Lys Ile Ile Asn
                85                  90                  95
Val Ser Tyr Asp Asp Ser Gly Leu Tyr Ser Cys Lys Pro Arg His Ser
            100                 105                 110
Asn Glu Val Leu Gly Asn Phe Thr Val Arg Val Thr Asp Ser Pro Ser
        115                 120                 125
Ser Gly Asp Asp Glu Asp Asp Asp Asp Glu Ser Glu Asp Thr Gly Val
    130                 135                 140
Pro Phe Trp Thr Arg Pro Asp Lys Met Glu Lys Lys Leu Leu Ala Val
145                 150                 155                 160
Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Gly Gly Asn Pro
                165                 170                 175
Thr Pro Thr Ile Tyr Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu
            180                 185                 190
His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val
        195                 200                 205
Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val
    210                 215                 220
Glu Asn Lys Tyr Gly Asn Ile Arg His Thr Tyr Gln Leu Asp Val Leu
225                 230                 235                 240
Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn
                245                 250                 255
Gln Thr Val Val Val Gly Ser Asn Val Glu Phe His Cys Lys Val Tyr
            260                 265                 270
Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn
        275                 280                 285
Gly Ser Lys Tyr Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys
    290                 295                 300
Thr Ala Gly Val Asn Thr Thr Asp Lys Glu Leu Glu Ile Leu Tyr Leu
305                 310                 315                 320
Arg Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
                325                 330                 335
Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Thr Val Leu Pro
            340                 345                 350
Ala Glu Glu Leu Met Glu Met Asp Asp Ser Gly Ser Val Tyr Ala Gly
        355                 360                 365
Ile Leu Ser Tyr Gly Thr Gly Leu Val Leu Phe Ile Leu Val Leu Val
    370                 375                 380
Ile Val Ile Ile Cys Arg Met Lys Met Pro Asn Lys Lys Ala Met Asn
385                 390                 395                 400
Thr Thr Thr Val Gln Lys Val Ser Lys Phe Pro Leu Lys Arg Gln Gln
                405                 410                 415
Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val
            420                 425                 430
Arg Ile Thr Arg Leu Ser Ser Ser Asp Gly Pro Met Leu Ala Asn Val
        435                 440                 445
Ser Glu Leu Glu Leu Pro Pro Asp Pro Lys Trp Glu Leu Ala Arg Ser
    450                 455                 460
Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
465                 470                 475                 480
Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Lys Pro Asn Lys Ala
                485                 490                 495
Ile Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp
            500                 505                 510
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
        515                 520                 525
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro
    530                 535                 540
Leu Tyr Val Leu Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr
545                 550                 555                 560
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Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Thr Cys
565 570 575
Lys Leu Pro Glu Glu Gln Leu Thr Phe Lys Asp Leu Val Ser Cys Ala
580 585 590
Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
595 600 605
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val
610 615 620
Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Ile Asp
625 630 635 640
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
645 650 655
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
660 665 670
Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
675 680 685
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
690 695 700
His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr Met Ile
705 710 715 720
Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
725 730 735
Gln Leu Val Glu Asp Leu Asp Arg Val Leu Thr Met Thr Ser Thr Asp
740 745 750
Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Ala Gly
755 760 765
Gln Asp Thr His Ser Thr Cys Ser Ser Gly Asp Asp Ser Val Phe Ala
770 775 780
His Asp Leu Leu Pro Asp Glu Pro Cys Leu Pro Lys His Val Pro Cys
785 790 795 800
Asn Gly Val Ile Arg Thr
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<210> 21
<211> 2484
<212> DNA
<213> Xenopus laevis

<400> 21
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acggtagaac agcccccatt cgatgagctc atgtttacaa ttggagaaac cattgagttg 240
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<211> 827
<212> PRT
<213> Xenopus laevis

<400> 22
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Ser Val Asn Cys Val Pro Ala Ala Arg Leu Pro Val Thr Leu Pro Gly
        35   40   45
Glu Asp Arg Ala Asn Arg Lys Ala Ser Asp Tyr Leu Thr Val Glu Gln
    50   55   60
Pro Pro Phe Asp Glu Leu Met Phe Thr Ile Gly Glu Thr Ile Glu Leu
65   70   75   80
Ser Cys Ser Ala Asp Asp Ala Ser Thr Thr Thr Lys Trp Phe Lys Asp
                85   90   95
Gly Ile Gly Ile Val Pro Asn Asn Arg Thr Ser Thr Arg Gln Gly Leu
            100   105   110
Leu Lys Ile Ile Asn Ile Ser Tyr Asp Asp Ser Gly Ile Tyr Ser Cys
        115   120   125
Arg Leu Trp His Ser Thr Glu Ile Leu Arg Asn Phe Thr Ile Arg Val
    130   135   140
Thr Asp Leu Pro Ser Ser Gly Asp Asp Glu Asp Asp Asp Asp Glu Thr
145   150   155   160
Glu Asp Arg Glu Pro Pro Arg Trp Thr Gln Pro Glu Lys Met Glu Lys
                165   170   175
Lys Leu Ile Ala Val Pro Ala Ala Asn Thr Ile Arg Phe Arg Cys Pro
            180   185   190
Ala Ala Gly Asn Pro Thr Pro Thr Ile His Trp Leu Lys Asn Gly Lys
        195   200   205
Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His Gln
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Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Lys Gly Asn
225   230   235   240
Tyr Thr Cys Val Val Glu Asn Lys Tyr Gly Ser Ile Arg Gln Thr Tyr
                245   250   255
Gln Leu Asp Val Leu Glu Arg Ser Ser His Arg Pro Ile Leu Gln Ala
            260   265   270
Gly Leu Pro Ala Asn Gln Thr Val Val Phe Gly Ser Asp Val Glu Phe
        275   280   285
His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys
    290   295   300
His Val Glu Val Asn Gly Ser Lys Tyr Gly Pro Asp Gly Asp Pro Tyr

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Val Thr Val Leu Gln Ser Phe Thr Asn Gly Thr Glu Val Asp Ser Thr
                325                 330                 335
Leu Ser Leu Lys Asn Val Thr Glu Thr His Glu Gly Gln Tyr Val Cys
            340                 345                 350
Arg Ala Asn Asn Phe Ile Gly Val Ala Glu Ala Ser Phe Trp Leu His
        355                 360                 365
Ile Tyr Lys Pro Ala Pro Ala Glu Pro Val Glu Lys Pro Ala Thr Thr
    370                 375                 380
Ser Ser Ser Ser Ile Thr Val Leu Ile Val Val Thr Ser Thr Ile Val
385                 390                 395                 400
Phe Ile Leu Leu Val Ile Ile Val Ile Thr Tyr Arg Met Lys Val Pro
                405                 410                 415
Ser Lys Lys Ala Met Ser Thr Pro Pro Val His Lys Val Ser Lys Phe
            420                 425                 430
Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser
        435                 440                 445
Asn Thr Pro Leu Val Arg Ile Thr His Leu Ser Ser Ser Asp Gly Thr
    450                 455                 460
Met Leu Ala Asn Val Ser Glu Leu Gly Leu Pro Leu Asp Pro Lys Trp
465                 470                 475                 480
Glu Leu Leu Arg Ser Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly
                485                 490                 495
Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Glu
            500                 505                 510
Arg Pro Asn Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp
        515                 520                 525
Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met
    530                 535                 540
Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys
545                 550                 555                 560
Thr Gln Asp Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ser Lys Gly
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Asn Leu Arg Glu Tyr Leu Lys Ala Arg Arg Pro Pro Gly Met Asp Tyr
            580                 585                 590
Ser Phe Asp Thr Cys Lys Ile Pro Ala Glu Gln Leu Thr Phe Lys Asp
        595                 600                 605
Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala
    610                 615                 620
Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val
625                 630                 635                 640
Thr Asp Asp Ile Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp
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Ile His Asn Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro
            660                 665                 670
Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Ile Tyr Thr His
        675                 680                 685
Gln Ser Asp Val Trp Ser Tyr Gly Val Leu Leu Trp Glu Ile Phe Thr
    690                 695                 700
Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys
705                 710                 715                 720
Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr His
                725                 730                 735
Glu Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Val Pro Ser Gln
            740                 745                 750
Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu Thr
        755                 760                 765
Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln
    770                 775                 780
Tyr Ser Pro Ala Gly Gln Asp Ser Asn Ser Thr Cys Ser Ser Gly Asp
785                 790                 795                 800
Asp Ser Val Phe Ala His Asp Ile Leu Pro Asp Glu Pro Cys Leu Pro
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<213> Xenopus laevis

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accaagtggt gtaaggatgg tattggcatt gtaccgaaca acagaacaag cacaaggcag 240
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cccacatga 2409

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<212> PRT
<213> Xenopus laevis

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Glu Gln Pro Pro Phe Asp Glu Leu Met Tyr Thr Ile Gly Glu Thr Ile
35 40 45
Glu Leu Ser Cys Ala Ala Glu Asp Ala Ser Thr Thr Thr Lys Trp Cys

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    50                  55                  60
Lys Asp Gly Ile Gly Ile Val Pro Asn Asn Arg Thr Ser Thr Arg Gln
65                  70                  75                  80
Gly Leu Leu Lys Ile Ile Asn Val Ser Ser Asp Asp Ser Gly Ile Tyr
                85                  90                  95
Ser Cys Arg Leu Trp His Ser Thr Glu Ile Leu Arg Asn Phe Thr Ile
            100                 105                 110
Arg Val Thr Asp Leu Pro Ser Ser Gly Asp Asp Glu Asp Asp Asp Asp
        115                 120                 125
Asp Asp Asp Asp Glu Thr Glu Asp Arg Glu Pro Pro Arg Trp Thr Gln
    130                 135                 140
Pro Glu Arg Met Glu Lys Lys Leu Ile Ala Val Pro Ala Ala Asn Thr
145                 150                 155                 160
Ile Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile His
                165                 170                 175
Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu His Arg Ile Gly Gly
            180                 185                 190
Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu Ser Val Val
        195                 200                 205
Pro Ser Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Lys Tyr Gly
    210                 215                 220
Ser Ile Arg Gln Thr Tyr Gln Leu Asp Val Leu Glu Arg Ser Ser His
225                 230                 235                 240
Arg Pro Ile Leu Gln Ala Gly Leu Pro Gly Asn Gln Thr Val Val Leu
                245                 250                 255
Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro
            260                 265                 270
His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser Lys Tyr Gly
        275                 280                 285
Pro Asp Gly Asp Pro Tyr Val Ser Val Leu Gln Ser Phe Ile Asn Gly
    290                 295                 300
Thr Glu Val Asp Ser Thr Leu Ser Leu Lys Asn Val Thr Glu Thr Asn
305                 310                 315                 320
Glu Gly Gln Tyr Val Cys Arg Ala Asn Asn Phe Ile Gly Val Ala Glu
                325                 330                 335
Ala Ser Phe Trp Leu His Ile Tyr Lys Pro Ala Pro Ala Glu Pro Val
            340                 345                 350
Glu Lys Ala Leu Thr Thr Ser Ser Ser Ser Ile Thr Val Leu Ile Val
        355                 360                 365
Val Thr Ser Thr Ile Val Phe Ile Leu Leu Val Ile Ile Val Ile Thr
    370                 375                 380
His Leu Met Lys Val Pro Ser Lys Lys Ser Met Thr Ala Pro Pro Val
385                 390                 395                 400
His Lys Val Ser Lys Phe Pro Leu Lys Arg Gln Gln Val Ser Leu Glu
                405                 410                 415
Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr His
            420                 425                 430
Leu Ser Ser Ser Asp Gly Thr Met Leu Ala Asn Val Ser Glu Leu Gly
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Leu Pro Leu Asp Pro Lys Trp Glu Leu Leu Arg Ser Arg Leu Thr Leu
    450                 455                 460
Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu
465                 470                 475                 480
Ala Ile Gly Ile Asp Lys Glu Arg Pro Asn Lys Pro Ala Thr Val Ala
                485                 490                 495
Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu
            500                 505                 510
Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile
        515                 520                 525
Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu
    530                 535                 540
Val Glu Tyr Ala Ser Lys Gly Ser Leu Arg Glu Tyr Leu Lys Ala Arg
545                 550                 555                 560
Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys Lys Ile Pro Ala
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580 585 590
Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu
595 600 605
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610 615 620
Asp Phe Gly Leu Ala Arg Asp Ile His Asn Ile Asp Tyr Tyr Lys Lys
625 630 635 640
Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu
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Phe Asp Arg Ile Tyr Thr His His Ser Asp Val Trp Ser Tyr Gly Val
660 665 670
Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile
675 680 685
Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp
690 695 700
Lys Pro Ala Asn Cys Thr His Glu Leu Tyr Met Ile Met Arg Glu Cys
705 710 715 720
Trp His Ala Val Pro Ser Gln Arg Pro Ala Phe Lys Gln Leu Val Glu
725 730 735
Asp Leu Asp Arg Val Leu Thr Val Thr Ser Thr Asn Glu Tyr Leu Asp
740 745 750
Leu Ser Val Ala Phe Glu Gln Tyr Ser Pro Pro Ser Gln Asp Ser His
755 760 765
Ser Thr Cys Ser Ser Gly Asp Asp Ser Val Phe Ala His Asp Ile Leu
770 775 780
Pro Asp Glu Pro Cys Leu Pro Lys His Gln Gln His Asn Gly Ala Ile
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<213> Pleurodeles waltlii

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<212> PRT
<213> Pleurodeles waltlii

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Phe Leu Pro Gly Asp Ala Ser Leu Val Glu Glu Leu Leu Phe Gly Thr
        35   40   45
Gly Asp Thr Ile Glu Leu Ser Cys Thr Thr Pro Gly Ser Ser Val Ser
    50   55   60
Val Val Trp Phe Lys Asp Gly Ile Ser Val Asp Pro Pro Thr Trp Ser
65   70   75   80
His Thr Gly Gln Lys Leu Leu Lys Ile Ile Asn Val Ser Tyr Asp Asp
                85   90   95
Ser Gly Val Tyr Ser Cys Lys Ala Arg Gln Ser Ser Glu Val Leu Arg
            100   105   110
Asn Val Thr Val Arg Val Thr Asp Ser Pro Ser Ser Gly Asp Asp Glu
        115   120   125
Asp Asp Asp Glu Glu Ser Glu Ser Ala Asn Ala Pro Lys Phe Thr Arg
    130   135   140
Pro Glu Trp Met Glu Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr
145   150   155   160
Val Arg Phe Arg Cys Pro Ala Ala Gly Lys Pro Thr Pro Ser Ile Thr
                165   170   175
Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu His Arg Ile Gly Gly
            180   185   190
Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu Ser Val Val
        195   200   205
Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Ala Asn Lys Tyr Gly
    210   215   220
Thr Ile Arg Glu Thr Tyr Thr Leu Asp Val Leu Glu Arg Thr Pro His
225   230   235   240
Arg Pro Ile Leu Gln Ala Gly Phe Arg Ser Asn Lys Thr Val Val Val
                245   250   255
Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro
            260   265   270
His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser Lys Phe Gly
        275   280   285
Pro Asp Gly Asn Pro Tyr Val Thr Val Leu Lys Thr Ala Gly Val Asn
    290   295   300
Thr Ser Asp Lys Glu Leu Glu Ile Gln Phe Leu Arg Asn Val Thr Phe
305   310   315   320
Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Tyr
                325   330   335

Ser His His Ser Ala Trp Leu Thr Val Leu Pro Pro Ala Glu Pro Val
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Pro Asp Val Asp Thr Ser Val Ser Ile Leu Ala Ala Ala Gly Cys Val
355 360 365
Ala Val Val Ile Leu Val Val Ile Ile Ile Phe Thr Tyr Lys Met Lys
370 375 380
Met Pro Ser Lys Lys Thr Met Asn Thr Ala Thr Val His Lys Val Ser
385 390 395 400
Lys Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met
405 410 415
Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Arg Leu Ser Ser Ser Asp
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Gly Pro Met Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro
435 440 445
Lys Trp Glu Leu Ser Arg Ser Arg Leu Thr Leu Gly Lys Pro Leu Gly
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Glu Gly Cys Phe Gly Gln Val Val Met Ala Asp Ala Val Gly Ile Glu
465 470 475 480
Lys Asp Lys Pro Asn Lys Ala Thr Ser Val Ala Val Lys Met Leu Lys
485 490 495
Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu
500 505 510
Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly
515 520 525
Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ser
530 535 540
Lys Gly Asn Leu Arg Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Met
545 550 555 560
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565 570 575
Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr
580 585 590
Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val
595 600 605
Leu Val Thr Asp Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala
610 615 620
Arg Asp Val His Asn Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg
625 630 635 640
Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr
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Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile
660 665 670
Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu
675 680 685
Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys
690 695 700
Thr His Glu Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Val Pro
705 710 715 720
Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val
725 730 735
Leu Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe
740 745 750
Glu Gln Tyr Ser Pro Ala Cys Pro Asp Ser His Ser Ser Cys Ser Ser
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Pro Lys His Gln Gln Tyr Asn Gly Val Ile Arg Thr
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<213> Danio rerio

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acctgtccgg actccaacag cacctgttcc tctggcgatg actctgtgtt tgcccacgac 2340
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taa 2403

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<213> Danio rerio

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Pro Val Tyr Ser Ala His Leu Leu Ser Pro Glu Pro Thr Asp Trp Val
            20   25   30
Ser Ser Glu Val Glu Val Phe Leu Glu Asp Tyr Val Ala Gly Val Gly
        35   40   45
Asp Thr Val Val Leu Ser Cys Thr Pro Gln Asp Phe Leu Leu Pro Ile
    50   55   60
Val Trp Gln Lys Asp Gly Asp Ala Val Ser Ser Ser Asn Arg Thr Arg
65   70   75   80
Val Gly Gln Lys Ala Leu Arg Ile Ile Asn Val Ser Tyr Glu Asp Ser
                85   90   95
Gly Val Tyr Ser Cys Arg His Ala His Lys Ser Met Leu Leu Ser Asn
            100   105   110

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Tyr Thr Val Lys Val Ile Asp Ser Leu Ser Ser Gly Asp Asp Glu Asp
        115                 120                 125
Tyr Asp Glu Asp Glu Asp Glu Ala Gly Asn Gly Asn Ala Glu Ala Pro
    130                 135                 140
Tyr Trp Thr Arg Ser Asp Arg Met Glu Lys Lys Leu Leu Ala Val Pro
145                 150                 155                 160
Ala Ala Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr
                165                 170                 175
Pro Ser Ile His Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu Gln
            180                 185                 190
Arg Met Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met
        195                 200                 205
Glu Ser Ala Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Gln
    210                 215                 220
Asn Lys Tyr Gly Ser Ile Lys His Thr Tyr Gln Leu Asp Val Leu Glu
225                 230                 235                 240
Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Gln
                245                 250                 255
Thr Val Val Val Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser
            260                 265                 270
Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Glu Val Asn Gly
        275                 280                 285
Ser Gln Tyr Gly Pro Asn Gly Ala Pro Tyr Val Asn Val Leu Lys Thr
    290                 295                 300
Ala Gly Ile Asn Thr Thr Asp Lys Glu Leu Glu Ile Leu Tyr Leu Thr
305                 310                 315                 320
Asn Val Ser Phe Glu Asp Ala Gly Gln Tyr Thr Cys Leu Ala Gly Asn
                325                 330                 335
Ser Ile Gly Tyr Asn His His Ser Ala Trp Leu Thr Val Leu Pro Ala
            340                 345                 350
Val Glu Met Glu Arg Glu Asp Asp Tyr Ala Asp Ile Leu Ile Tyr Val
        355                 360                 365
Thr Ser Cys Val Leu Phe Ile Leu Thr Met Val Ile Ile Ile Leu Cys
    370                 375                 380
Arg Met Trp Ile Asn Thr Gln Lys Thr Leu Pro Ala Pro Pro Val Gln
385                 390                 395                 400
Lys Leu Ser Lys Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn
                405                 410                 415
Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser
            420                 425                 430
Ser Ser Asp Gly Pro Met Leu Pro Asn Val Ser Glu Leu Glu Leu Pro
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Ser Asp Pro Lys Trp Glu Phe Thr Arg Thr Lys Leu Thr Leu Gly Lys
    450                 455                 460
Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile
465                 470                 475                 480
Gly Ile Asp Lys Glu Lys Pro Asn Lys Pro Leu Thr Val Ala Val Lys
                485                 490                 495
Met Leu Lys Asp Asp Gly Thr Asp Lys Asp Leu Ser Asp Leu Val Ser
            500                 505                 510
Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn
        515                 520                 525
Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu Val Glu
    530                 535                 540
Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr Leu Arg Ala Arg Arg Pro
545                 550                 555                 560
Pro Gly Met Asp Tyr Ser Phe Asp Thr Cys Lys Ile Pro Asn Glu Thr
                565                 570                 575
Leu Thr Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly
            580                 585                 590
Met Glu Tyr Leu Ala Ser Lys Lys Cys Ile His Arg Asp Pro Ala Ala
        595                 600                 605
Arg Asn Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe
    610                 615                 620
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Gly Leu Ala Arg Asp Val His Asn Ile Asp Tyr Tyr Lys Lys Thr Thr
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Asn Gly Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp
                645                 650                 655
Arg Val Tyr Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Leu Leu
            660                 665                 670
Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val
        675                 680                 685
Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro
    690                 695                 700
Ala Asn Cys Thr His Glu Leu Tyr Met Ile Met Arg Glu Cys Trp His
705                 710                 715                 720
Ala Val Pro Ser Gln Arg Pro Thr Phe Arg Gln Leu Val Glu Asp His
                725                 730                 735
Asp Arg Val Leu Ser Met Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser
            740                 745                 750
Val Pro Phe Glu Gln Tyr Ser Pro Thr Cys Pro Asp Ser Asn Ser Thr
        755                 760                 765
Cys Ser Ser Gly Asp Asp Ser Val Phe Ala His Asp Pro Leu Pro Glu
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Glu Pro Cys Leu Pro Lys His His His Ser Asn Gly Val Ile Arg Thr
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